REMARKS

Claim 1 has been amended to further describe the claimed hand held spray product in accordance with the embodiment illustrated in Figure 1. See also: page 8, lines 28 to 30 describing the transfer conduit for transfer of the liquid composition from the reservoir towards the nozzle means (said conduit being termed the "liquid transfer conduit" in the amended claim); page 11, lines 26 to 30 describing the valve shown as component 15 in Figure 1 (termed the "transfer conduit valve" in the amended claim) and noting that when the valve is released, the liquid composition is forced up the transfer conduit towards the nozzle); page 8, lines 1 to 2, describing the buffer chamber for receiving air from the MEMS pump or pumps; page 11, lines 13 to 16 which notes that the MEMS pumps draw air from outside of the device through an inlet valve (identified as component 9 of Figure 11 and termed the "air inlet valve" in the amended claim) which opens when the pressure in an entry chamber (identified as component 10 of Figure 11 and termed the "air entry chamber" in the amended claim) is reduced by the operation of the MEMS pumps; page 11, lines 19 to 21 which notes that air in the buffer chamber may be allowed to build in pressure until it is released to flow through a channel (identified as component 13 of Figure 1 and termed the "air flow channel" in the amended claim) by the opening of a valve (identified as component 15 of Figure 1 and termed the "air control valve" in the amended claim); page 11, lines 25 to 26, which notes that air flows through the channel 13 into the reservoir holding the liquid composition; and page 6, lines 27 to 30 noting that when the MEMS pump acts as an air pump, its function is to act as an air compressor, increasing the air pressure adjacent to the liquid composition. Thus, in the embodiment described by amended claim 1 the MEMS pumps function as an air compressor.

New claim 15 describes a hand held spraying product in accordance with the embodiment illustrated in Figure 2, wherein the MEMS pump acts to create an air stream that serves to draw the liquid composition from the reservoir using a venturi effect. The operation of the pump illustrated by Figure 2 is described at page 12, lines 4 to 25. See also page 11, lines 1 to 4.

New claim 16 describes the electrically powered pump as comprising a parallel array of micro-electro mechanical system pumps. See, for example, page 7, lines 24 to 25. New claim 17 describes the electrically powered pump as comprising a parallel array of mircro-elector mechanical system pumps in series. See, for example, page 7, lines 24 to 25. New claim 18 describes the electrically powered pump as comprising a parallel array of mircro-elector mechanical system pumps with non-synchronous pulse frequencies. See, for example, page 7, lines 24 to 16.

Claim 2 has been amended to add a period, which is believed to moot the 35 USC 112 second paragraph rejection. Claim 3 has been amended to change its dependency from claim 2 to claim 1. Additionally, claims 1, 4, 8, 9, and 10 have been amended to write out the full text of the acronym MEMS.

Entry of the subject amendment is respectfully requested.

Applicants traverse the various 35 USC 103(a) rejections set forth in the Office Action of October 17, 2007.

Claims 1, 13 and 14 stands rejected over Ulczynski et al. (US 6,182,904) in view of Gordon et al. (US 2002/0065479). Ulczynski et al. discloses an automated electronically controlled micro-sprayer for spraying pheromones in controlled amounts for a short duration in timed intervals to control insects in an outdoor setting. The

dispenser therein described includes a disposable sealed container having a pressurized gas contained therein. The sprayer contains an adapter configured to be sealingly connected to the container orifice and a nozzle sealing connected to the adapter. There is nothing in the patent that discloses or suggests MEMS spray dispensers as described by the subject claims wherein air is drawn into the dispenser from outside of the dispenser, pressurized in a buffer chamber, released into a transfer conduit, and either i) introduced into a reservoir where it pressurizes the liquid composition contained therein or ii) is channelled toward a nozzle means drawing a liquid composition from the reservoir towards the nozzle means by a venturi effect. Ulcyzynski et al. discloses very different dispensers than those described by the subject claims. Gordon et al. discloses apparatus and methods for dispensing pet care substances. The apparatus is characterized as comprising a dispensing controller, a dispenser operated by the dispensing controller for dispensing a substance at times determined by the dispensing controller. In one embodiment, Gordon et al. discloses that the dispenser and electronic dispensing controller comprise a micro-electro-mechanic systems pump. The description of the MEMS pump found in paragraphs 0098 through 0100, is only a generic description, the configuration of the dispenser is not given, and nothing in the citation discloses or suggests hand held spray dispensers as described by the subject claims. Accordingly, Gordon et al. fails to remedy the deficiencies of Ulcyzynski et al. and even if combined, the citations fail to disclose or render obvious the dispensers of the subject claims.

Claims 2 and 5 stand rejected over Ulczynski et al. in view of Gordon et al. and further in view of Borod et al. (US 5,335,855). Borod et al. discloses a hygienic srpay bottle that includes a hand pump for building up air pressure on a liquid contained in the sparing bottle. Again, there is nothing in the citation that discloses pumps configured as described by the subject claims, or that otherwise cures the deficiencies of Ulczynski

et al. and Gordon et al. Even if combined, the citations fail to disclose or render obvious the dispensers of the subject claims.

Claim 3 stands rejected over Ulczynski et al. in view of Gordon et al. further in view of Borod et al. and further in view of Michalchik et al. (US 4,776,515). Michalchik et al. discloses an apparatus for generating a mist of ionized fluids as an aerosol. The pump consists of a single molded plastic chamber with two thin diapragms stacked directly on top of each other. The apparatus therein described employs a DC power source to apply an electrical charge to a prepared liquid to form micro-atomized charged droplets. The patent does discloses that the resistivity of the liquid may be in the range of 1.6 $X10^3$ to 4.0 x 10^5 ohm-centimeters. There is however, nothing in the patent that discloses or suggests the claimed dispensers or that otherwise cures the deficiencies of Ulczynski et al. in view of Gordon et al., further in view of Borod et al. Even if combined, the citations fail to disclose or render obvious the dispensers of the subject claims.

Claim 4 stands rejected over Ulczynski et al. in view of Gordon et al. further in view of Borod et al. further in view of Michalchik et al. further in view of Herb et al. (US 6,179,586); claims 8 and 9 stand rejected over Ulczynski et al. in view of Gordon et al. and further in view of Herb et al. Claim 10 stands rejected over Ulczynski et al. in view of Gordon et al. further in view of Herb et al. and further in view of Peters et al. (US2001/0014286). Herb et al. discloses diaphragm pumps that are electrostatically driven. Various stacking arrays of the pumps are disclosed, including stacked parallel arrays and pump arrays stacked in series. In its Background section, Herb et al. discloses the use of micropumps which it characterizes as having a pumping capacity of one to tens of microliters per minute. The patent discloses that while such pumps are useful for applications such as implantable systems for drug delivery or micro dosage in chemical analysis systems, the pumping speeds of such systems are many orders of

magnitude smaller than those required in what it characterizes as "sampling applications". There is, however, nothing in Herb et al. that discloses spray dispensers configured as described by the subject claims or that otherwise cures the deficiencies of Ulczynski et al., Gordon et al., Borod et al., and Michalchik et al. Peters et al. discloses a piezoelectric micropump for pumping fluid from a container to a delivery point in low volumes and at controlled flow rates. The pumping action is created by movement of two or three diaphragms. Peters et al. is directed to a particular kind of micropump; like Herb et al. there is nothing in the citation that discloses dispensers configured as described by the subject claims, or that discloses or suggests that micropumps as therein described would be suitable for creating sufficient air compression or venturi effect to move fluid, from a reservoir to a nozzle means from which it is sprayed. It is respectfully submitted that, even if combined, the citations fail to disclose or render obvious the dispensers of the subject claims.

Claim 6 stands rejected over Ulczynski et al. in view of Gordon et al. further in view of Borod et al. further in view of Lang et al. (US 6,131,212). Lang et al. discloses spa jets equipped with air/water venturi. There is nothing in the citation remotely connected with systems such as hand held spray dispensers. Moreover, even combined with Ulczynski et al., Gordon et al., and Borod et al., the resulting combination fails to disclose or render obvious the dispensers described by the amended claims.

Claim 7 stands rejected over Ulczynski et al. in view of Gordon et al. and further in view of Talaski et al. (US 5,374,169). Talaski et al. is directed to a fuel pump tubular pulse damper, employed in a gerotor-type fuel pump. There is nothing in the citation remotely connected with hand held spray dispensers. Moreover, even if combined with Ulczynski et al. and Gordon et al., the resulting combination fails to disclose or render obvious the dispensers described by the amended claims.

Claims 11 and 12 stand rejected over Ulczynski et al. in view of Gordon et al. further in view of Borod et al. and further in view of Kohlmann et al. (US 5,333,660). Kohlmann et al. discloses a purified water dispensing apparatus, which includes a means of pumping water from a water supply source (e.g., a supply line) to a dispensing spout, and a series of filters, including an osmosis membrane filter into which water is pumped by means of a booster pump that increases head pressure of the water supply. The patent discloses that a further element of the dispensing apparatus is a variable capacity accumulator tank comprising a sealed chamber containing pressurized gas and a flexible bladder for receiving water through an intake port fluidly connected to the water source. As water is removed from the accumulation tank, the pressure in the bladder drops. The dispenser further comprises a means for measuring the pressure of gas within the sealed chamber of the accumulator tank as well as a means for activating the pump whenever the gas pressure within the accumulator tank reaches a value indicating that a predetermined amount of water is present within the accumulator tank. There is nothing in Kohlmann et al. that discloses or suggests dispensers configured as described by the subject claims. The variable capacity accumulator tank is not a buffer chamber as described by the subject claims nor does it perform in a manner functionally analogous to such buffer chamber. Even if combined with Ulczynski et al. Gordon et al. and Borod et al., the resulting combination does not disclose or suggest the hand held dispensers of the subject claims.

In light of the above amendments and remarks, reconsideration and allowance of the subject claims is respectfully requested.

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If a telephone conversation would be of assistance in advancing the prosecution of the present application, applicants' undersigned attorney invites the Examiner to telephone at the number provided.

Respectfully submitted,

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